St. Thomas East End Reserves Sustainable Finance Plan

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Photographs:
Main cover: Cas Cay Mangrove Lagoon, St. Thomas, USVI
Bottom left: Hawksbill Turtle, St. Thomas, USVI
Bottom middle: Water Point, St. Thomas, USVI
Bottom right: French Angelfish, Cas Cay Mangrove Lagoon, St. Thomas, USVI
Photos: Agathe Sector

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EXECUTIVE SUMMARY

The Cas Cay Mangrove Lagoon and the St. James and Compass Point Marine Reserves and Wildlife Sanctuaries are legally protected entities but they have had little management and oversight. It is proposed that STEER be established as a marine park with a dedicated management body to enforce the laws, conduct scientific monitoring and habitat restoration and educate and engage stakeholders. One of the main obstacles to creating the STEER marine park (herein "STEER") is a lack of financial and human resources. The Sustainable Finance Plan uses business planning methodology, adapted for protected areas, to address these issues and lays the foundation for achieving financial sustainability. The plan identifies the operational and investment needs of STEER, the available resources if any and proposes a portfolio of financial mechanisms to fund these needs. The funding will have to come from a variety of sources including government, concessions and private donations as well as larger scale fund raising programs down the road. The cost will be significant but conservation of the STEER area is in the best interest of the St. Thomas community as a partial estimate of the ecosystem services and tourism provided by the coral reef and seagrass beds within STEER can be valued at $3.4 million per year.

Tourism is St. Thomas's most important economic activity and much of it occurs in the East End and within STEER marine boundaries, especially sailing. Tourism generated a direct economic impact of $1.3 billion in 2004. Tourism also provides revenue to the government in the form of hotel taxes, mooring and slip permits, boat licenses, and commercial and residential development permits. The draw for tourists is the pristine beaches, clear blue waters and healthy overall environment as well as good infrastructure, pleasant hotels and other amenities. If the former is degraded or destroyed however, tourists can go elsewhere making conservation of STEER a top priority for the continued viability of the tourism industry.

STEER has had some scientific monitoring and other conservation activities within its boundaries by the DFW and DEP but it has never had a management agency of its own. It is difficult to track historical expenditure as many of the programs implemented by DFW or DEP were part of larger island wide or territory wide programs where the expenditure within STEER was not tracked. DFW staff estimated that $100,000 has been spent on STEER within their department over the last 10 years.

Once STEER is set up with a managing body, it is recommended that it have its own financial system, with its own line item in the USVI government rather than having it be part of CZM's financial accounts. It is also recommended that STEER track the funding received, any revenue generated and expenditure in annual budgets. These budgets should be structured using the activity based accounting system which is an accounting method used to determine expenditure by specific activities or program areas rather than along more traditional budgeting structures.

It is assumed that the divisions of DPNR that have been working in the area will continue to do so and their budgets will remain the same so any funding needs for STEER will be in addition and separate from that work. The needs analysis uses the Activity Based Accounting method described above and determines the operational needs at a critical and optimal level. STEER needs a management entity and an operational structure. This requires the hiring of staff, office space and many other investments to

get the park up and running. The needs are greatest in the resource management and protection category and management and administration category. The former category includes activities related to patrol and enforcement, scientific monitoring and research, as well as wildlife management and habitat restoration. The total recurrent needs for the park total $808,000 at a critical level and $976,000 at an optimal level. This includes 7.5 full time staff at the critical level made up of a marine park director, a marine biologist, an education and outreach coordinator, an administrative assistant, two and a half interpretive ranger positions and a full time DEE officer. The figure increases to 9 full time staff at the optimal level by increasing interpretive rangers from 2.5 to 4. If investments are included the figures increase to $1.8 million and $2.5 million respectively. Included in investments are several large baseline studies that will help in monitoring the natural resources and conservation efforts of STEER.

The financial needs analysis can be projected forward ten years based on an estimate of the recurrent costs adjusted for inflation and based on an estimate of when the investments will be implemented. In ten years, STEER will need $1.1 million at a critical level and $1.3 million at an optimal level, however the first three years when the major infrastructural and research investments will need to be made which will require much more.

STEER has many basic needs and will require a diverse source of revenue to meet its conservation goals. The cost recovery of any financial mechanism must not exceed the total revenue generated and any financial mechanism must also comply with the goals and objectives of the Park. In analyzing the financial mechanisms in the context of STEER, ten were identified as having potential. Federal Funding, PA Trust, Concession Fees, Permits and Licenses, Membership Dues and Private Donations were seen to be the most feasible by stakeholders and an Environmental Entrance Fee was determined to have high revenue generation potential. The establishment of a protected area trust was seen as an important tool to mitigate volatility in revenue generation and act as a pass through for all revenue generated by the marine park ensuring that this revenue is re-invested into conservation activities. Revenue projections for the most feasible financial mechanisms total $658,000 per year and $4.6 million per year for future, more complex financial mechanisms. The former does not cover the critical recurrent needs of $808,000 nor the investment costs. Therefore, the local government will also have to contribute and other potentially more difficult financial mechanisms will have to be implemented.

One of the main challenges to implementation of a sustainable finance plan for STEER is the negative view local stakeholders have of governmental management and their reticence to pay fees. Already local residents, especially business owners, feel that they already pay too much in fees to the government. Marine users feel they are unfairly targeted for revenue generation in parks despite the fact that they are not the main polluters but rather protectors of the marine environment. The load should be shared by marine and terrestrial users and by those having the greatest impact on the marine resources. Any new financial mechanisms will require the input and participation of the community and the private sector as well as other stakeholders. In addition, it is recommended that a semi-autonomous body be set up to more effectively and efficiently manage all marine and terrestrial parks within a territory wide system of protected areas.

INTRODUCTION

The St. Thomas East End Reserves (STEER) is located in one of the busiest tourism areas on St. Thomas, especially for marine activities such as sailing and diving. Many of the people leaving for St. John by ferry leave from the East End (Red Hook, which is adjacent to the STEER area) or from Charlotte Amalie and pass through the STEER area. There are several marinas and yacht clubs adjacent to the STEER boundaries and many hotels, condominiums and rental properties along the coastline. This high development and activity level is a threat to the marine resources but it also presents an opportunity to partner with the business and residential communities in the area to promote and implement responsible sustainable development and conservation of the valuable environmental services provided by nature.

The Cas Cay Mangrove Lagoon and the St. James and Compass Point Marine Reserves and Wildlife Sanctuaries are legally protected entities but they have had little management and oversight. The various divisions of the Department of Planning and Natural Resources (DPNR) are stretched thin and in some cases receive federal funding only for certain activities that do not include protected area management. It is proposed that STEER be established as a marine park with a dedicated management body to enforce the laws, conduct scientific monitoring and habitat restoration and educate and engage stakeholders. One of the main obstacles to creating the STEER marine park (herein "STEER") is a lack of financial and human resources. The Sustainable Finance Plan uses business planning methodology, adapted for protected areas, to address these issues and lays the foundation for achieving financial sustainability. The plan identifies the operational and investment needs of STEER, the available resources if any and proposes a portfolio of financial mechanisms to fund these needs. The funding will have to come from a variety of sources including government, concessions and private donations as well as larger scale fund raising programs down the road.

The establishment of STEER as a marine park is under way but the implementation of its conservation goals and of the sustainable financing needed to meet them will require political will and the support of the community. The cost will be significant but conservation of the STEER area is in the best interest of the residents, the private sector and the government as it contributes enormously to the tourism industry which is the main economic activity of the island and also provides ecosystem services that are extremely costly if not impossible to replace and benefit us all. STEER is a small, but very important part of the ecology of the Virgin Islands.

METHODOLOGY

The sustainable finance plan is based on a business plan and uses conservation finance planning tools to address the following structural and financial questions:

- What is the current legislation and related management structure of STEER and of the protected areas system (PAS) for the USVI, and is it adequate for the current and envisioned protected area system?
- If the legislation and management structures are not adequate, what new legislation and/or management structures need to be developed to meet the needs of STEER and of the protected area system?
- What is the current level and source of financing for STEER?
- What expenditures are being made for STEER and how efficiently and effectively are funds being used?
- Taking existing and planned protected area management for STEER into account, what are the unmet financial needs over the next decade?
- What is the range of options for filling the funding gap and what is the potential of each option to generate revenue for STEER?

To answer these questions, the plan gives an overview of the current legislative and management structures governing the protected areas. A market analysis follows and provides the economic context by presenting information on the goods and services provided by the natural resources and their impact on the economy.

The plan then delves into the financial analysis by researching the historical and current funding available, the needs of STEER, and the gap between what is needed and what is currently available at both critical and optimal levels. The needs and available funding are then projected forward to determine the funding gap over the next 10 years to 2019.

The funding gap is followed by an analysis of potential financial strategies. This involves identifying potential financial mechanisms to generate revenue from the goods and services provided by protected areas. These financial mechanisms are then screened for complexity and impact of implementation. A feasibility analysis of the funding options with the most potential is reviewed and revenue projections are estimated. An analysis of funding options that may be pursued in the future concludes the financial analysis.

This funding analysis is followed by an examination of the legislative and administrative challenges, needs and opportunities for financial sustainability of STEER and the recommendations to overcome these challenges. A five year action plan is developed. Based on this plan, criteria will be developed to guide the implementation process and measure its success.

Information gathered for this report came from individual interviews with staff from the DPNR's Division of Coastal Zone Management (CZM), the Division of Fish and Wildlife (DFW), the Division of Environmental Enforcement (DEE), the Nature Conservancy (TNC), the University of the Virgin Islands (UVI), the Department of Tourism, the private sector involved in tourism such as hotels, sailing companies, tour operators and dive shop owners, and community stakeholders. For a list of participants interviewed, please see Annex I, Table IV. Other data were collected from government and project reports, consultancy reports on the marine resources, and policy and legislative documents. Feedback on the draft of this Plan was collected from STEER Core Planning Team members involved in developing the Management Plan and incorporated into the final document.

Legislation and Management

Legislation

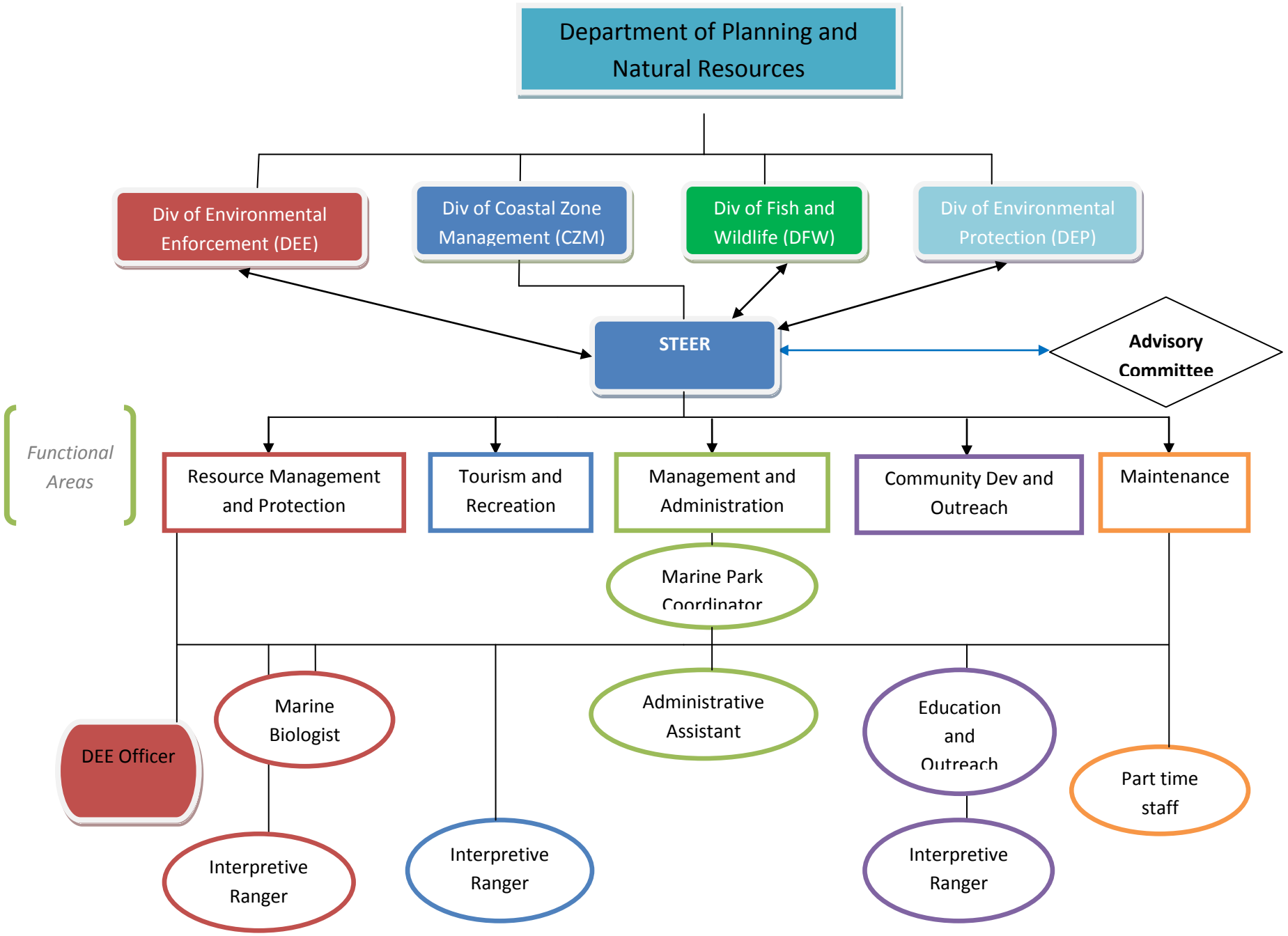
The Virgin Islands Code Title 12, Chapter 1, Sub chapter 7 entitled "Wildlife and Marine Sanctuaries and Game Preserves" is the legislation concerning wildlife and marine sanctuaries such as those in STEER (USVI Code No. 5294, 1987). This legislation dictates the prohibited acts in wildlife and marine sanctuaries and states that the Commissioner of Planning and Natural Resources will control and supervise them. It also states that the Commissioner can designate or establish new sanctuaries.

There is also the legislation regarding Parks and Natural Resources. Title 32, Chapter 2, Section 21 establishes a "Director of Territorial Parks" which is tasked with managing the Division of Parks within the Department of Housing, Parks and Recreation. "It shall be the duty of the Division of Parks to supervise, administer, manage, regulate and control the use and operation of all public parks, lands for public recreation, marine parks, and such others as may be designated by regulations by the Commissioner, including but not limited to beaches within the coastal zone…" (USVI Code No. 5265, 1987, p. 62). In practice, the Parks Division manages terrestrial areas only, which includes beaches.

Act 6634, Section 30 adds to Title 32 of the Virgin Islands Code relating to Parks and Natural Resources a chapter 2A relating to the Territorial Park Trust Fund (USVI Code No. 6634, 2003, p. 138). This legislation establishes a fund for a territory wide system of protected areas that is separate from the government's general fund and can be financed through the fees established in section 24 of Title 32, Chapter 2 (USVI Code No. 5265, 1987, p. 62).

Management Structure

STEER is under the control and supervision of the Commissioner of DPNR. The area however has not been actively managed by DPNR in terms of conservation, habitat restoration or enforcement other than ad hoc directives, programs or activities implemented by the Division of Environmental Protection (DEP), DFW, or DEE. The area has not had its own dedicated staff or a managing body. The following flow chart presents the potential management structure of STEER as determined by a needs assessment that will be presented in the Financial Analysis section of this document. The structure is organized by functional area. A functional area is an organizational category that has different goals and objectives and distinct programmatic activities. For more information on functional areas please see Table 1, Annex I. It should be noted that all of the various staff would work in other functional areas such as administration, natural resource protection and maintenance. The diagram is meant to show the overall number of staff and in which functional area they generally work, as well as the overarching governmental management structure.


Department of Planning and Natural Resources
Div of Environmental Enforcement (DEE)
Div of Coastal Zone Management (CZM)
Div of Fish and Wildlife (DFW)
Div of Environmental Protection (DEP)
STEER
Advisory Committee
Functional Areas
Resource Management and Protection
Tourism and Recreation
Management and Administration
Community Dev and Outreach
Maintenance
Marine Park Coordinator
DEE Officer
Marine Biologist
Administrative Assistant
Education and Outreach
Part time staff
Interpretive Ranger
Interpretive Ranger
Interpretive Ranger

Territory Wide Protected Area Management

Since the 1970's various studies, plans and initiatives have been implemented to set up a territory wide parks system. Other initiatives have focused on a marine parks system. In section 98 of the act establishing the East End Marine Park in St. Croix, it is written the "establishment of territorial system of marine parks authorized" (USVI Code No. 6572, 2003). There have also been several studies commissioned, such as the "Management Framework for a System of Marine Protected Areas for the U.S. Virgin Islands" (Gardner, 2002), or the "Marine Protected Areas of the USVI: Resource Description Report" (Potter, 2002) which discuss this idea. CZM, which is tasked for identifying new marine protected areas, envisions the creation of a territory wide system of marine protected areas. This would in theory increase the efficiency of managing the marine protected areas on St. Croix and St. Thomas as well as any newly designated marine protected areas. The overall management could be centralized in a semi-autonomous Protected Area Authority (herein "Authority"). This idea of a separate managing entity is also mentioned in the STXEEMP Management Plan written in 2002 by The Nature Conservancy (The Nature Conservancy , 2002).

Considering the integrated and interrelated nature of terrestrial and marine conservation it is recommended that a territory-wide system of protected areas and the resulting Authority would oversee all territorial and marine protected areas. It would have its own budget line, account and revenue generation capability. Each island would have its Park Coordinators, with one Director for the overall Authority.

This consolidation would maximize the efficiency of staff resources and advocacy efforts as well as assist in integrating two groups that should be working closely together. In addition, resources and revenue could be pooled and used in areas that may not generate their own revenue but that are priority conservation areas. A semi-autonomous management entity could ensure that signs and boundary markers are uniform throughout the islands. Rules and regulations could also be streamlined making it easier for the local population and for visitors to know and understand what is allowed and not allowed in various zones. It could more efficiently work with the various DPNR divisions on multiple matters concerning the parks on different islands rather than having separate coordinators competing for time and funding. Monitoring efforts could be better integrated and priority sites identified across islands and terrestrial and marine impacts and linkages could be better studied. This would also help in concentrating efforts for coordinating research and monitoring not only between the terrestrial and marine protected areas but also with the federally managed parks of St. John and Buck Island (St. Croix), as well as the Salt River Lagoon and Sandy Point National Wildlife Refuge.

Changes in legislation would be required to create such a territorial parks system as well as the creation of a semi-autonomous managing entity. There is legislation that exists that enables the creation of a park trust fund to generate a stable source of income but this is only for a terrestrial park system and would be housed under the Department of Parks and Recreation which would not be ideal for meeting conservation goals. Ideally, new legislation would consolidate into one comprehensive bill the existing marine and terrestrial protected area legislation, including legislation which sets up wildlife reserves, sanctuaries, etc. and

consolidate legislation regarding protected area trust funds as well as the legislation for the management of these protected areas.

According to the Island Resources Foundation report "History of Protected Area Initiatives in the U.S. Virgin Islands" (Towle, 2003), the various efforts to create a territorial parks system have been many and they have all failed or if passed into law they have never been implemented. This is due to lack of political will, the government's inability to implement legislation, lack of resources and the public's lack of support and confidence in the government's ability to effectively manage protected areas. These deficiencies would have to be addressed and strong leadership would have to be in place for this territorial park system to be created and operational. It would require making protected area management a priority in the executive and legislative bodies of government, holding multiple stakeholder meetings for public comment and review of the proposed changes, and dedicated funding for the process and the resulting management agency.

MARKET ANALYSIS

Natural Resources Valuation

The natural resources of the USVI provide goods and services through direct and indirect benefits as outlined in the following table. These are benefits that have enormous economic value to the islands but also aesthetic and bequest values for future generations that cannot be easily quantified.

Goods and Services of STEER	
Use Benefits:	**Recipient**
Direct:	
• Recreation	Tourism industry, tourists, local population, government
• Harvesting of baitfish, limited hook- and line fishery	Fishers, consumers, tourism
• Education	Schools, children, visitors
• Research	Scientists, universities, management agencies
Indirect:	
• ecosystem services	Residents, visitors flora and fauna,

• watershed protection	Residents, government, water company
• groundwater recharge	Residents, government, water company
• coastal protection	Coastal homeowners and businesses, residents, government, boaters (safe mooring for emergency weather events)
• maintenance of biodiversity	Residents, consumers, pharmaceutical companies, flora and fauna
• climate regulation	World population, local population
• nutrient retention	Farmers, fishers, tourism industry, residents
Non Use Benefits	
Bequest value	Residents, tourism industry, future generations
Existence value:	Residents, tourism industry
• cultural heritage	
• aesthetic value	Local landowners, residents

To value the natural resources of the park, it is helpful to not only look at their uses but also to determine their economic impact. The most important revenue source for St. Thomas is tourism which falls into the direct use recreation category listed in the above table.

Direct Use Benefits

USVI Tourism Market

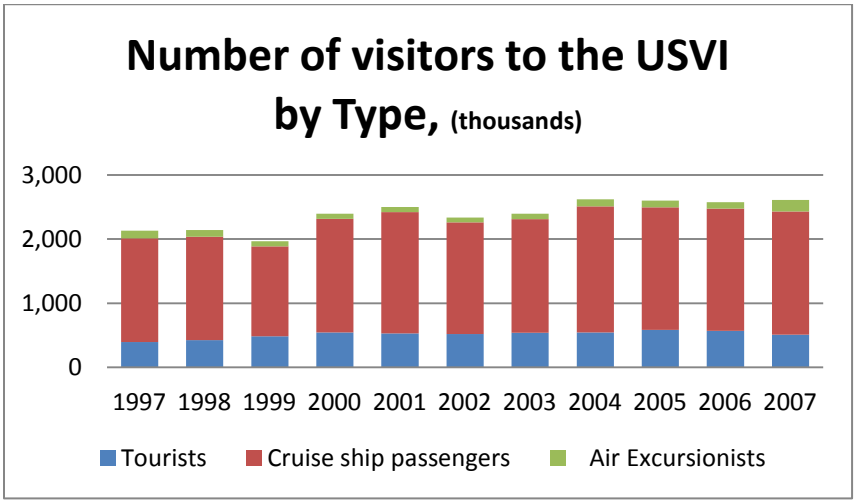
In 2008, the most recent year data is available, the USVI welcomed 2.4 million visitors. This can be broken down by tourists and excursionists. Excursionists are visitors who stay less than 24 hours in the area, such as cruise ship visitors and day trip passengers arriving by air. According to the U.S. Virgin Islands 2004-2005 Visitor Exit Survey for Air Visitors and Cruise Visitors, "Tourism is the largest industry in the USVI and the major source of income and employment. The industry generates some $4 billion in total economic impact and accounts for 30% of the workforce. Direct gross expenditure by visitors was $1.5 billion." (Dorsett, 2005, p. xi).

According to the exit surveys, the air visitors' profile is relatively affluent and educated with an average age of 42.5 and most coming from households that earned $100,000 or more. 50% were first time visitors and the other 50% were repeat visitors with 23.4% having visited five or more times before

(Dorsett, 2005, p. xii). Air visitors totaled 658,638 in 2004. Tourist expenditure accounted for 58% of total visitor spending and same day air visitors accounted for 2%. Air visitor spending totaled $863.8 million in 2005 with an average expenditure of $1,218 per person per trip (Dorsett, 2005, p. xii). Tourists spent money on hotels, condo and villa rentals, food shops and restaurants, car rentals, taxi rides and tours, and gifts as well as on marine activities. 52.2% engaged in water sports, 33% took an island tour, 13.9% went scuba diving and 5.4% went fishing. (Dorsett, 2005, p. xii). Tourists pay a hotel tax which goes into the USVI government's general fund. The tax totaled $18.5 million in 2008 (Bureau of Economic Research).

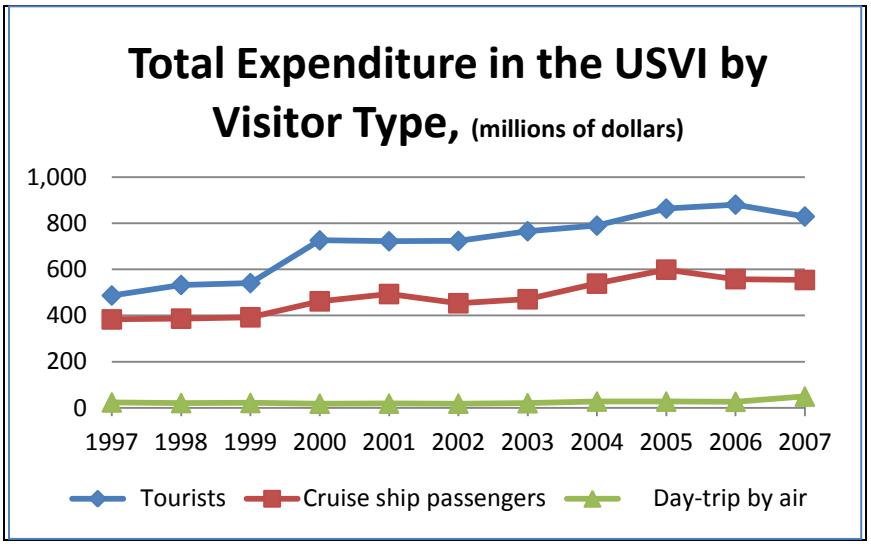
According to the exit surveys, the average age of cruise visitors was 49 years and most came from households earning $100,000 or more. More than half came to the USVI for the first time and 16.8% were visiting for the fifth time or more. 1.96 million cruise visitors came to the USVI in 2004. Their direct expenditure impact was $599.2 million. Cruise ship passengers spent on average $281 in the Territory (Dorsett, 2005, pp. xi-xiii). They spent money on tours and transportation, at restaurants and gift stores as well as on entertainment and recreation. About 30% went on a ship sponsored excursion, with some going to beaches and others taking an island tour (Dorsett, 2005, pp. 28-29). Cruise ship passengers pay a per passenger head tax of $5.60, which goes to the Port Authority (Authority, 2006). In 2007, this totaled $10.74 million, assuming all cruise visitors paid the fee.

The following chart shows the total number of visitors to the USVI by type over a ten year period.



Source: Bureau of Economic Research www.usviber.org

Cruise ship tourism is generally more volatile compared to tourists who stay for a few days or longer. It is also not as beneficial for the economy in terms of the amount of money spent per visitor. The following chart shows the average expenditure per passenger type over a ten year period.



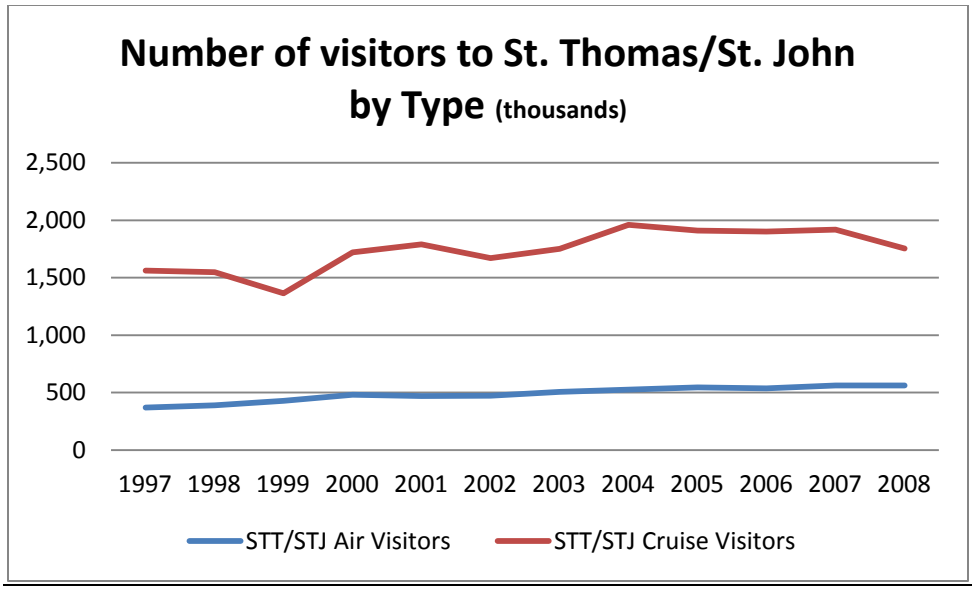
Source: Bureau of Economic Research www.usviber.org

The two charts above show that although three times as many cruise ship passengers visited the USVI than tourists in 2007, the tourists spent about one and half times more. 511,000 tourists came to the USVI compared to 1.9 million cruise ship passengers yet the tourists spent $829 million versus $554 million by cruise ship visitors. Both types of visitors have economic benefits to the islands but tourists clearly have a greater economic impact. Stakeholders have stated that the large numbers of cruise ship passengers congest the roads, and take a toll on road infrastructure, sewage and waste absorption, as well as the water supply. Both sets of tourists can negatively impact coral reefs while snorkeling and diving.

St. Thomas Tourism Market

In 2008, 561,000 air visitors and 1.76 million cruise ship passengers came to St. Thomas and St. John (Bureau of Economic Research). According to the exit surveys, in 2004 tourists and same day air visitors totaled 526,500 or 80% of the total. They spent $693.5 million. The average expenditure per tourist per trip was $1,306. 64% came on vacation. The average stay was a week (Dorsett, 2005, pp. xi-xiii). During the same year, cruise visitors totaled 1.96 million and their direct expenditure impact was $598.1 million. The average expenditure of a cruise visitor was $306 (Dorsett, 2005, pp. xi-xiii). 31.6% went on a ship sponsored excursion with 10.2% taking an island tour, 7.2% visited Magen's Bay; 5.2% visited Coral World (Dorsett, 2005, p. 29).

The following chart shows visitor numbers over eleven years from 1997 to 2008. The chart shows that cruise visitor numbers vary more than air visitors and that the latter have steadily increased albeit more slowly than the cruise visitors. However cruise visitors have decreased since 2004.



Source: Bureau of Economic Research www.usviber.org

STEER

There is no visitor or tourism expenditure data specifically for STEER but many hotels, condo rentals, restaurants, dive shops and sailing companies operate adjacent to the reserves. About 24% of all air visitors chose to stay in a hotel operating adjacent to the reserves (Placeholder3p. 32). Almost all the sailing in St. Thomas goes thru the reserves. The most popular mooring area for sailboats in STEER is Christmas Cove, where almost all bare boat and crewed boats stop overnight either on their way out or on their way back from a several day cruise. Christmas Cove is also a popular spot for local residents, boaters from the BVI's and Puerto Rico and other tourists. Observational data compiled from people who live and work in STEER estimate that about 20 boats per day anchor at Christmas Cove during the high season and three to four charter boats use the area with an average of 45 people per day. The VI Eco Tours operates within the Cas Cay Mangrove Lagoon Sanctuary and has about 10,000 visitors per year mostly from cruise ships but also including 1,000 local students.

The yacht clubs and other private mooring areas that operate within STEER boundaries generate revenue for the government in the form of mooring permit fees and boat registration fees as well as in membership dues which support the clubs. The various private moorings, which total 150 within STEER, and the dock slips provide revenue for the Division of Environmental Enforcement as do the boat permits. This information however is not digitized and the corresponding revenue figures were not available.

Fishing Industry

Commercial fishing is an important economic activity in St. Thomas and is considered a direct use harvesting benefit. There are also quite a few recreational fishing tournaments in St. Thomas. According to the "*USVI Marine Resources and Fisheries Strategic and Comprehensive Plan*", 78% of commercial fishermen in St. Thomas and St. John said they targeted reef fish, 54% targeted coastal

pelagic, 36% targeted lobster and 9% targeted conch. (DFW, 2005, p. 134). All of these types of marine life can be found within the STEER boundaries however fishing in STEER is limited by law to bait fishing and some hook and line fishing with a permit. There is no specific fishing data within STEER related to bait fishing and hook and line fishing but according to stakeholders too many permits are being issued. In addition, stakeholders state that there is illegal take, especially in the lagoon area, which mainly is subsistence fishing. The impact of this threat is yet to be determined (see STEER Threats Table). It can be assumed that the nursery in the mangrove lagoon and the protected habitat also provide fish for the fishing industry taking place outside of STEER and this has an economic value albeit indirectly. Commercial fishing licenses are managed by the Division of Environmental Enforcement which generates revenue for the Division. Recreational fishing licenses are not currently needed however their requirement is expected to be implemented in January 2011.

Indirect Use Benefit

Coral reefs, mangroves, seagrass beds, and salt ponds provide important habitat for marine and terrestrial wildlife but they also provide important ecosystem services that keeps the waters clean and clear, protects the coastline against erosion and waves, and offers nursery grounds for fish and other marine life to develop. It is these outcomes that the tourism and fishing industries depend on. The following section outlines these services and the estimates of their economic value in the form of the subsequent tourism and fishing revenue they support, as well as their other functions.

Coral reefs help protect coastlines against wave energy, and provide habitat and food for marine wildlife, such as reef fish, lobsters, turtles etc. They also supply sand for beaches. According to the "Coral Reef Habitat Assessment for U.S. Marine Protected Areas, U.S. Virgin Islands" report, twelve percent of the Cas Cay Mangrove Lagoon and thirty-two percent of the St. James reserve is coral reef/colonized hard bottom (NOAA National Ocean Service, 2007). One of the last remaining areas of mangroves on St. Thomas exists in the Cas Cay Mangrove Lagoon area. Mangroves provide nursery grounds and food for fish; filter soil runoff thus improving water quality; fix land and provide coastal protection against tidal wave and wind energy thus reducing erosion. Seagrass beds also provide food and shelter for small fish, crustaceans, and turtles and they also improve water quality by stabilizing loose sediment and filtering some pollutants out of the water. Reduced sedimentation helps coral reefs survive. Like mangroves, seagrass beds also reduce wave energy on the coastline. Forty-eight percent of the Cas Cay Mangrove Lagoon and the St. James reserve area are seagrass beds (NOAA National Ocean Service, 2007). Salt ponds are an important habitat for fish, birds, and also act as a filtration system by fixing soil runoff and sediment that would otherwise enter the sea. Unfortunately, the Compass Point Salt Pond, which is also part of STEER, has degraded to the extent that the tidal/current flow into the pond is impeded due to sedimentation build up. It is still a good birding site however and provides interesting wildlife viewing. .

Estimates of the economic value of coral reefs range from $100,000 to $600,000 per sq km and from $200,000 to $900,000 per sq km for mangroves. (Wells, 2006, p. 5). This range depends on how close the reefs and mangroves are to developed centers of tourism, fishing etc. The value of seagrass beds are estimated at $350,000 per sq km (Loney, 2009). Data on sq km area for STEER are limited to coral

reef/colonized hard bottom and seagrass beds. **Using these estimates of coral reef and seagrass cover, the lower bound (partial) value of STEER totals $3.4 million per year.** The valuation techniques are based on many assumptions and do not include other values that are very hard to quantify such as the aesthetic value of the ocean to residents, the potential pharmaceutical values of coral reefs, the value of biodiversity, and the replacement costs of the ecosystem services. What is known is that the value of the marine resources within STEER is immensely important to the tourism industry in St. Thomas due to the ecosystem services they provide free of charge. It is in the USVI's interest to invest in STEER so that these resources are better protected today so that future generations will be able to enjoy and benefit from them.

FINANCIAL ANALYSIS

Historical Expenditure and Funding

STEER has had some scientific monitoring and other conservation activities within its boundaries by the DFW, DEP, UVI, NOAA and USEPA, but it has never had a management agency of its own. It is difficult to track historical expenditure as many of the programs implemented by DFW or DEP were part of larger island wide or territory wide programs where the expenditure within STEER was not tracked. DFW staff estimated that $100,000 has been spent on STEER within their department over the last 10 years, and up to $233,000 in current grant spending is going toward STEER projects. Staff of The Nature Conservancy, and stakeholders from the various government agencies, scientists from the University of the Virgin Islands and residents and private business owners, were involved in the drafting of an updated management plan for STEER. The costs of this work was mostly in travel and staff time but is difficult to quantify as different people have participated throughout the course of this work, for different periods of time.

Once STEER is set up with a managing body, it is recommended that it have its own financial system, with its own line item in the USVI government rather than having it be part of CZM's financial accounts. It is also recommended that STEER track the funding received, any revenue generated and expenditure in annual budgets. These budgets should be structured using the activity based accounting system which is an accounting method used to determine expenditure by specific activities or program areas rather than along more traditional budgeting structures. This provides a view into how money is spent in the various functions of the management agency. It includes staff and operating expenses (recurrent) as well as investment expenditure organized by functional area. Please refer to Annex I, Table I to better understand the various functional areas.

Financial Gap Analysis

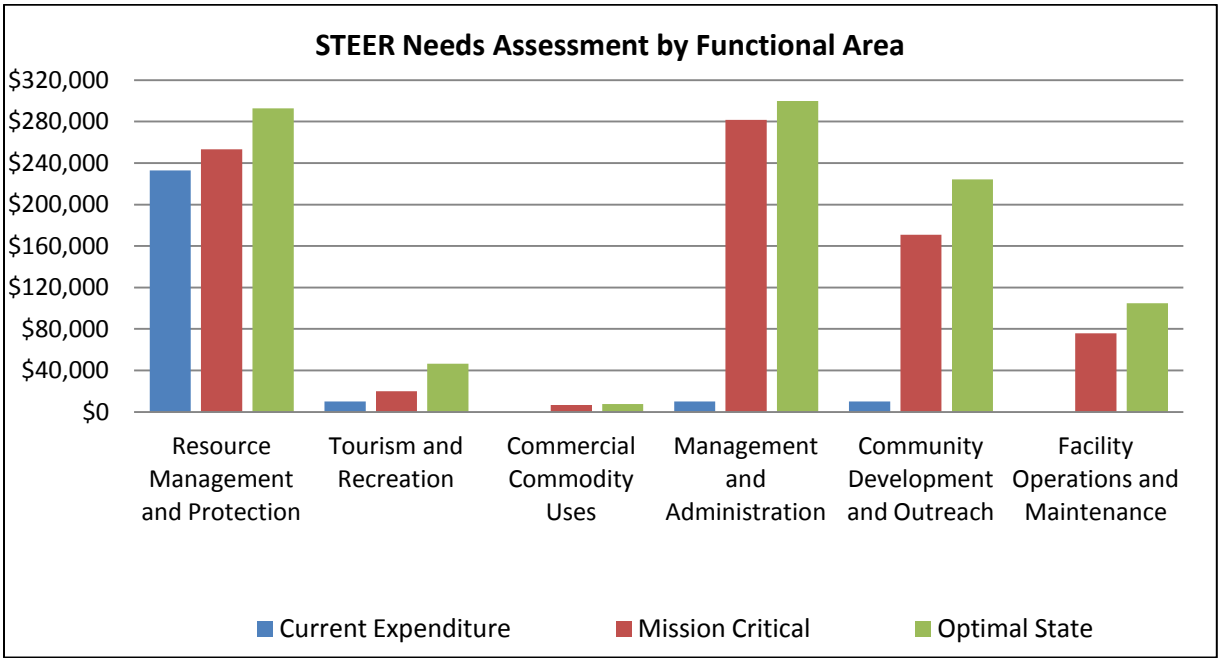
STEER has not had a dedicated management body with staff and a budget therefore no historical or current expenditure data exists so the needs analysis will be the same as the gap analysis. It is assumed that the divisions of DPNR that have been working in the area will continue to do so and their budgets

will remain the same so any funding needs for STEER will be in addition and separate from that work. The following section presents the needs of STEER described by various stakeholder interviews. The needs analysis uses the Activity Based Accounting method described above and determines the operational needs at a critical and optimal level. Mission critical can be defined as the level of operations and the amount of resources that are necessary to meet the most important of the park's goals and objectives. Mission optimal is defined as the level of operations and the amount of resources that are necessary to fully meet the goals and objectives of the park's program areas.

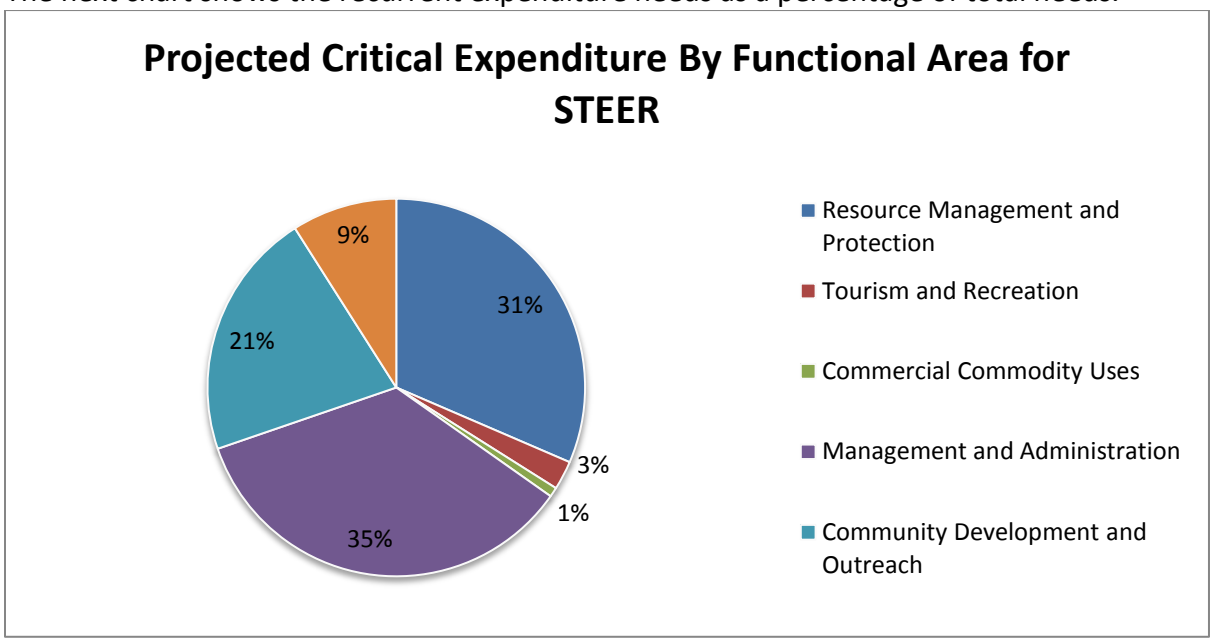
Funding Needs Assessment

Through interviews with stakeholders and members of the STEER core working group developing the STEER management plan, the needs of STEER were calculated and organized by functional area. Needs were determined at a critical and optimal level for staff, non-staff recurrent, infrastructure and investment expenditure.

STEER needs a management entity and an operational structure. This requires the hiring of staff, office space and many other investments to get the park up and running. The following chart provides the recurring needs of the system at the critical and optimal level. The needs are greatest in the management and administration category followed by the resource management and protection category. The latter category includes activities related to patrol and enforcement, scientific monitoring and research, as well as wildlife management and habitat restoration.



The next chart shows the recurrent expenditure needs as a percentage of total needs.



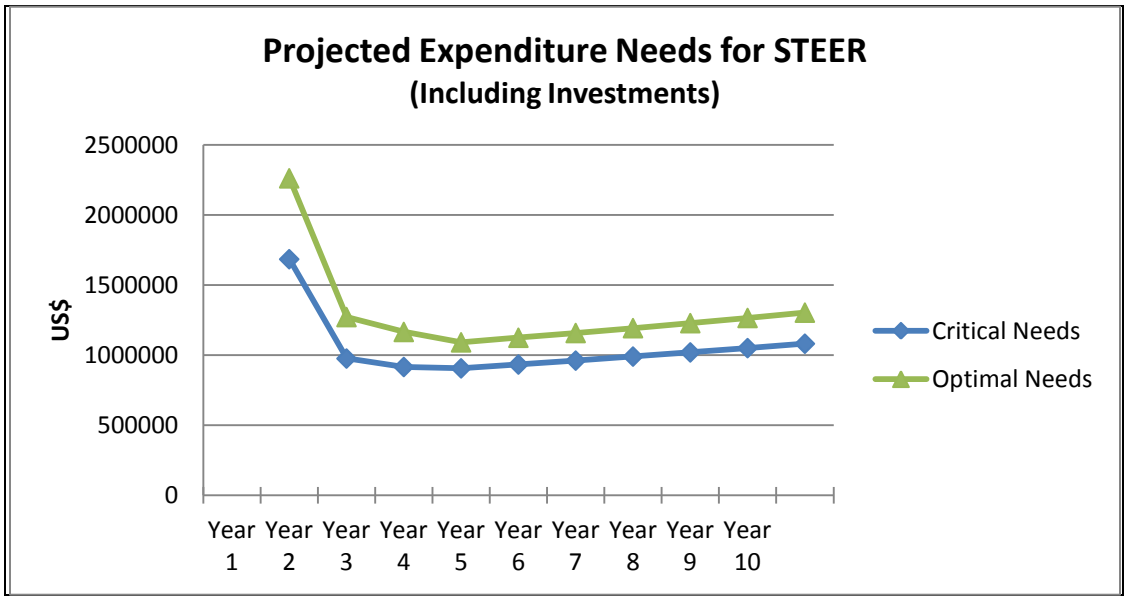
The total recurrent needs for the park total $808,000 at a critical level and $976,000 at an optimal level. This includes 7.5 full time staff at the critical level made up of a marine park director, a marine biologist, an education and outreach coordinator, an administrative assistant, two and a half interpretive ranger positions and a full time DEE officer. The figure increases to 9 full time staff at the optimal level by increasing interpretive rangers from 2.5 to 4. If investments are included the figures increase to $1.8 million and $2.5 million respectively. Included in investments are several large baseline studies that will help in monitoring the natural resources and conservation efforts of STEER. The Financial Summary Table is in Annex I, Table II of this document. For the list of investments please refer to Annex I, Table III.

Financial Gap

The financial gap is measured by taking current funding and subtracting it from the needs of the system. Since there is no current funding for recurrent costs, the needs equal the gap. Although current DFW, DEP and DEE activities were considered to be in addition to STEER needs, one investment cost that has been secured by DFW for the installation of moorings was included as current funding available for STEER. This reduces the investment gap accordingly by $150,000. As mentioned earlier, the recurrent needs are per year whereas the investment needs will have to be prioritized and implemented over a number of years as funding becomes available. However, the staffing and operational needs are based on activities and goals as outlined in the STEER management plan which includes a large number of scientific research and monitoring activities that depend on many of the investments being implemented.

The financial needs analysis can be projected forward ten years based on an estimate of the recurrent costs adjusted for inflation and based on an estimate of when the investments will be implemented.

The following chart shows the projected needs at a current and optimal level. In ten years, STEER will need $1.1 million and $1.3 million respectively, however the first three years when the major infrastructural and research investments will need to be made will require much more. Year 1 requires $1.7 million and $2.3 million respectively.



FINANCIAL STRATEGY

STEER has many basic needs and will require a diverse source of revenue to meet its conservation goals. The following section outlines potential funding sources and their feasibility as well as projected revenue for the most viable financial mechanisms.

Expenditure Efficiency

In developing a sustainable financial strategy one of the first areas to examine is spending efficiency and to then identify cost saving measures. It will be important for STEER to hire the necessary staff to get the park up and running so as to achieve tangible results that stakeholders can see as achieving the goals of STEER and to secure more funding. Staff shortages and the resulting lack of results have had negative consequences on the amount of federal funding that has been provided to the East End Marine Park in St. Croix. The STXEEMP had to return funding when certain positions could not be filled as well as re-assign funding to other areas when projects could not be implemented. This is an area that CZM should concentrate its efforts on improving with STEER.

Identification of Financial Mechanisms

The following table identifies potential financial mechanisms and their sources of revenue.

Possible Funding Sources	Source of Revenue
Government Funding	Federal (NOAA, USFWS, USEPA, NFWF), Local Government
International NGOs	TNC, WWF, CI, Island Resources Foundation
Private Foundations	Macarthur Foundation, Ocean Fund, etc.
Payments for Environmental Services	Landowners, Developers
Land Conservation Fund	Land transfers
Park User Fees	Individuals, Tourists, Fishermen, Researchers
Special Commercial Uses	Tour operators, private sector, concessionaires
Per Tourist Exit Tax	Stay-over visitors
Environmental Levy	Individuals, Developers
Hotel Occupancy Tax	Hotels, condos, rentals
Cruise Ship Fees	Cruise ship passengers
Fines	Individuals, Corporations
Permits and Licenses	Fishers, Researchers, Filming and Photography
Biodiversity Prospecting	Pharmaceutical Companies
Carbon Sequestration Payments	Corporations, Government
Green Investments	Corporations, Hotels, Cruise ships
PA Trust	NGO's, private, government, fees
Private donations and membership	Individuals, Corporations

Feasibility Analysis of Financial Mechanisms

The feasibility of any potential source of funding is evaluated by examining how difficult it would be to implement, the certainty or volatility of the revenue stream and the potential revenue generation. The cost recovery must not exceed the total revenue generated. Any financial mechanism must also comply with the goals and objectives of the Park.

In analyzing the financial mechanisms in the context of STEER, ten were identified as having potential. They were then rated by the above criteria. The following table presents the results.

Financial Mechanism	Potential for revenue generation	Certainty of revenue stream	Complexity of implementation	Overall Value
Rating (1 is low, 2 is medium, 3 is high)	*1, 2, 3*	*1, 2, 3*	*-1, -2, -3*	
Fines	1	2	-1	2
Government Contribution	3	3	-2	**4**
Membership Dues	2	2	-1	**3**
Park User Fees	2	2	-2	2
PA Trust	3	3	-2	**4**
Payments for Environmental Services	1	1	-3	-1
Environmental Entrance Fee	3	2	-3	2
Concession fees, Permits and Licenses	1	3	-1	**3**
Private donations	2	2	-1	**3**
Special Commercial Uses	1	2	-1	2

Feasibility and Potential Revenue Projections

The following describes the financial mechanisms with the greatest potential, the feasibility of implementing them and estimates of the possible revenue that could be generated

Fines

Once the STEER rules and regulations are well advertised and enforced, it is reasonable to assume that five violations could occur that would be fined at $1000 each. This would generate $5,000 per year. One such enforceable rule is the no wake zone in the St. James Wildlife Sanctuary and Marine Reserve. The ferries often pass through the cut between Great St. James and Water Point too quickly, disrupting sail boats, making noise, etc. Stakeholders have stated that enforcing the no wake regulation would be a simple yet tangible result of STEER enforcement and would be appreciated by boaters and residents alike.

Another enforcement issue is land based pollution into STEER. There are plans for more development in the East End as well as a waste to energy project that would replace the land fill. Monitoring by STEER staff would enable enforcement of any pollution, including hazardous waste, into nearby waters. Leakage from the dump has been seen in the lagoon as well as oil and gas waste from marinas. DEE is located on the other side of the island and is too short staffed to enforce the wildlife and marine sanctuaries' rules and regulations. Implementing fines could assist in generating revenue for monitoring, patrol and enforcement but this requires that all fines collected are re-invested into STEER and not used for other purposes or by other agencies.

The feasibility of implementing fines depends on the ability for STEER to acquire funding for staff, and the necessary infrastructure to patrol the land and waters as well as research to identify sources of pollution and monitoring to track pollution levels. But more importantly, STEER needs a dedicated Environmental Enforcement officer who can issue fines and seize property of offenders. This has proven difficult in the STXEEMP due to understaffing in the DEE. Rangers are allowed to issue fines but hesitate to do so without law enforcement present. Better coordination is needed between park staff and police and environmental enforcement to allow for the issuance of fines. Police and environmental enforcement staff need to be trained in park rules and regulations as well as the value and benefits of conservation.

Government Funding

The NOAA agency and the Department of Interior fund many conservation programs in the USVI. The DFW is fully funded using federal grants as is the STXEEMP. The STXEEMP has received on average $340,000 in annual federal funding and local government match. It is assumed that these same grants could be accessed and that the two marine parks would not be in competition for the same pot of funding. Additionally, the local government will have to supplement funding, especially for recurrent expenses such as salaries that need a stable source of funding. The feasibility of the local government providing funds to manage marine parks is low however due to inadequate funding of existing conservation agencies.

Membership Dues and Private Donations

Stakeholders have stated their reluctance to added fees imposed by CZM on marine resource users. They would be more willing to become members of a "Friends of STEER" type non-profit organization than be forced to pay annual fees. One such organization already exists by the name of the "Friends of Christmas Cove". This non-profit was created by the residents of Water Point, to ensure that Christmas Cove would continue to be a place that could be enjoyed for its pristine beauty and natural setting. They were able to raise a significant amount of money in a short period of time. The National Park in St. John also has a "Friends of the Park" organization that raises money for specific projects that the Park would like to implement.

It is difficult to estimate how much revenue could be generated from a non-profit or membership based organization per year without a major issue or interest engaging supporters. Assuming users of STEER and residents of the East End, including the Yacht Club members, residents of Water Point, as well as visitors to the area would provide support and receive free access to the area, a reasonable estimate could be made that membership fees of $20 per year could generate $100,000 annually. $150,000 could also be raised thru private donations by several wealthy individuals. These two mechanisms therefore could raise **$250,000 per year**.

STEER could also host a fishing festival with a recreational fishing tournament (outside of STEER boundaries as it is mostly a no-take zone) that emphasizes the role that marine protected areas play in providing nursery and protected habitat for fish development. Or STEER could host a special music festival with proceeds going to the park. Assuming one of these types of special fundraising events took place with 350 people paying $25 to compete in the fishing tournament or to see a concert, with volunteers putting on the event and goods and services donated, **$8,750** could be raised.

Concession Fees, Licenses and Permits

Many hotels, condominium complexes, yacht clubs, sailing companies and other private revenue companies operate within or adjacent to STEER boundaries and generate revenue due to their proximity to the beaches and marine resources on the East End of the island. Implementing a $100 per month concession fee for hotels, marinas etc could generate $36,000.

Tour operators and taxis bring visitors to various areas in and around STEER but the reserves themselves are not land based attractions that are included in tours of the island. A strong marketing effort would have to be implemented as well as some infrastructure investments to create a stop for tours and attract visitors. This could be a lookout point similar to Drakes Seat, where signs and information about STEER could be available as well as information provided by an interpretive ranger. Concession stands could be set up and tourists could buy maps, souvenirs, drinks and food. Operators of the stands would pay a fee of $25 per month. Assuming 5 operators existed then $1500 could be generated.

Groups wishing to have events within the park boundaries or any filming or photography activities would have to get a permit costing $250. Assuming 10 such types of permits were sold per year, $2500 could be generated.

The total amount generated by these various fees would be **$40,000**.

User Fees

Typical user fees include park entrance fees and mooring fees. Stakeholders were reticent to pay for entrance or mooring fees other than an overnight mooring fee of $15 like in the Virgin Islands National Park in St. John. DFW has funding to install mooring buoys at Christmas Cove however, the relatively small number of buoys would not generate enough revenue to cover the insurance and maintenance costs required if payment for the moorings was mandatory. The costs of charging entrance fees for all users of STEER waters is prohibitive since there are so many access points and stakeholders did not want to increase costs for tourists. For now, user fees are not seen as a feasible source of revenue.

Adding up all of the different funding mechanisms, **$645,000** could be generated annually. This is not enough to cover the recurrent expenses gap at the critical level of $808,000 identified in the Financial Needs section. Other financial mechanisms will have to be developed in the future to meet optimal funding needs.

Future Potential Funding Mechanisms

The following financial mechanisms are all mechanisms that have potential at a territory wide scale and would work to finance the entire protected area system, thus needing a management entity that would oversee all locally run parks and coordinate with federally managed protected areas. This territory wide Protected Area system is envisioned in the future by CZM and it is for this reason that the following financial mechanisms are in the future potential funding mechanisms section.

Environmental Entrance Fee for Tourists and Cruise Ship Passengers

An environmental fee of US$5, collected from tourists (visitors who stay longer than 24 hours), could generate **US$2.56 million per year** assuming 2007 total USVI overnight visitor rates stay constant. This fee would be collected mainly at the airports but also at all marine entry points. This financial mechanism would require an extensive public awareness campaign at all ports of entry for visitors to understand why this fee is charged and that the funds provide for the conservation of the natural resources and landscapes which visitors have come to enjoy. If implemented this fee would eliminate any user fees as well as concession fees. A willingness to pay survey should be conducted to determine if US$5 is too high.

Cruise ship passengers pay a fee that goes to the government but since the government doesn't substantially support the marine parks, none of that money goes towards conservation, despite the impact that large numbers of cruise ship passengers have on the islands' infrastructure, water supply, waste and sanitation, beaches and coral reefs. If all cruise ship passengers throughout the territory were charged a $1 environmental fee, then **$1.92 million** could be generated annually, assuming 2007 numbers stay constant. It is extremely difficult to negotiate any price increases with cruise ship companies who can always go to other islands. Yet cruise ship companies have invested large amounts of money in St. Thomas and the USVI are a premier cruise ship destination. Cruise ship companies are

also trying to promote that they are environmentally friendly companies. Cruise ship passengers generally do not have a lot of discretionary spending as most of the costs of the cruise are paid up front with everything included. A willingness to pay survey would have to be conducted to determine if a $1 fee is feasible.

This fee may be voluntary at first to gauge the number of people who will actually pay to conserve the USVI's natural resources. Visitors could receive information about the islands or some other marketing product in return for a donation. This is another financial mechanism that should be instituted when there is a PAS so that the entire territory could benefit as most of the cruise ship passengers stop in St. Thomas. This type of fee system is much easier to collect than user fees which take a lot of staff resources to implement and collect. It also spreads out the cost and makes it more affordable for everyone rather than targeting only those people who visit a park. Visitors who come to the USVI are there to enjoy the beaches and beautiful scenery and indirectly benefit from conservation efforts even if they do not visit a marine park.

There is a fear however that charging such a large fee in one lump sum would deter visitors who can go to other islands that don't have such a fee. However, given the results from a recently completed willingness to pay survey in the Bahamas, in which we would expect similar results for the USVI, any significant loss of visitors is unlikely. The Bahamas willingness to pay survey, conducted in the spring of 2008, found that 21 percent of respondents were willing to pay a maximum increase of US$50 in their total costs per person per visit to help protect the natural and cultural environment. This is followed by 18 percent willing to absorb a US$25 increase and 17 percent willing to pay up to US$100. Added together, the study found that 79 percent of respondents were willing to pay at least US$25 more to protect the environment (Jane, 2008, p. 28). This shows that visitors are willing to pay a significantly higher price than is otherwise assumed to protect the cultural and natural environment of the destination they have paid to visit and enjoy.

The Belize Protected Area Conservation Trust (PACT) currently collects a US$3.75 exit fee to help fund its protected area system. It is working on collecting "20% of all concession fees, recreation related license fees, cruise ship passenger fees and permit fees collected in conjunction with public protected areas of Belize." (How PACT Works, 2009). It has been instrumental in raising funds for conservation in Belize and is seen as an innovative financial mechanism for protected areas.

There is some risk with an environmental fee. The first is that most of the revenue generation of the PAS would depend on tourism which can be volatile. Another risk is that the funds generated would be placed into the general account of the government and funneled into non PAS expenditure. However both of these risks could be addressed by having these funds flow directly through a Protected Area Trust which would decrease the variability of revenue flows and put the control of the funds in a non-governmental board.

PA Trust

In order to leverage revenue generated and make it sustainable in the long term a conservation trust fund could be established. A trust fund is a mechanism which mitigates the variability of revenue flows

from other financial mechanisms to ensure that selected management activities receive stable and continuous funding. A conservation trust fund is an independent non-governmental source of funding for a specific environmental issue or cause. In this case, it would be a protected areas trust fund with an endowment component initially capitalized by an environmental fee and/or through vigorous private fundraising. The trust would also have a revolving fund and would act as a pass through entity for revenue generated by the Park. This would ensure that all income from the park is re-invested into conservation activities. This type of trust allows for any excess revenue, for which perhaps the system cannot absorb right away, to be placed in the trust adding to the endowment and available to be used later.

A board of trustees would be established which would develop an investment management plan, oversee the financial management of the trust and decide how to distribute the annual disbursement of money from the interest and dividends generated annually. This board would consist of individuals from both the public and private sector who work in or know about finance and investment as well as environmental, conservation and protected area issues. The board would administer the funds in such a way as to meet certain criteria that are in line with the trust's mission and goals. Transparency and financial reporting would be built into the structure of the trust fund by contracting an independent auditor to review accounting and financial statements. As an independent body from the government, a fund avoids the bureaucratic inefficiencies of government and can respond more quickly and more flexibly to the changing needs of the protected area system. A conservation trust fund also gives donors more confidence that their money is being directly spent on conservation. Donors traditionally have been very supportive of the creation of PA trusts and this sentiment was echoed by STEER stakeholders.

Trust fund management costs can be high necessitating that the PA trust would have to be for the entire territory and all its protected areas, furthering the need for a territory wide system of protected areas. It may be beneficial for federally managed protected areas to also be a part of the fund and share the management costs through the establishment of a collective trust where each individual fund or park is a shareholder. Funds with larger endowments have had higher returns at a lower cost. Not only are fees proportionally lower but administrative time is also reduced. It is hoped that a financial services firm would be willing to manage the fund at a lower cost.

If a protected area trust was established and capitalized to have US$3 million in principal, averaged a ten percent annual return and had a five percent annual disbursement amount from the principal, it could generate US$150,000 per year. Establishing the fund would take time as legislation would have to be passed, and if the territory wide fees were not instituted, then other fundraising would have to occur.

The following table summarizes the potential revenue projections and compares the projections to the critical and optimal funding gap.

Funding Mechanisms	Fee $	No. of people	Total
Membership Dues	20	5,000	100,000
Private Donations	1000, 10,000	50, 10	150,000
Fines	1000	5	5000
Permits for scientific research, photography, filming, special events	250	10	2,500
Concessions: Tours, Vending	300	5	1,500
Concessions: Hotels, Condo Complexes, Rentals Co's	1,200	30	36,000
Federal Funding	25	500	350,000
Total			**645,000**
Future Potential Funding Mechanisms for a PAS			
Cruise Ship Environmental Fee	1	1,918,000	1,918,000
Air Tourism Environmental Fee	5	511,000	2,555,000
Protected Area Trust			150,000
Total			**4,623,000**
Critical Gap of STEER including investments			**1,772,000**
Optimal Gap of STEER including investments			**2,513,000**

CHALLENGES TO IMPLEMENTATION

One of the main challenges to implementation of a sustainable finance plan for STEER is the negative view local stakeholders have of governmental management and their reticence to pay fees. The negative view is affirmed in studies such as the "History of Protected Area Initiatives in the U.S. Virgin Islands" (Towle, 2003) which outlines the difficulties the USVI has had in implementing effective protected area systems or the NOAA review of the Coastal Zone Management Program (Office of Ocean

and Coastal Resource Management, 2009) which highlights staffing and project implementation issues. Hiring staff has been a major challenge for the STXEEMP in the past. The process is long and laborious and many qualified applicants cannot wait such a long time to be hired. The same may happen for STEER. If a semi-autonomous body were created, perhaps they could implement a different hiring procedure which improves upon the government hiring process. In addition, applicants for the Interpretive Ranger positions are supposed to be fishermen and other users of the area but often times they do not have the academic qualifications. More training needs to be available for fishermen to be able to qualify for conservation type jobs.

The wildlife sanctuaries and marine reserves in the East End are currently more like "paper parks" with very little conservation and protection. It will likely take quite a number of years for STEER to be a well functioning and effective protected area, especially if hiring issues are not resolved. This may discourage stakeholders from paying fees or donating money in that they may not "see" any tangible benefits from the establishment of STEER and its managing entity. Already local residents, especially business owners, feel that they already pay too much in fees to the government. Marine users feel they are unfairly targeted for revenue generation in parks despite the fact that they are not the main polluters but rather protectors of the marine environment. The load should be shared by marine and terrestrial users and by those having the greatest impact on the marine resources. Before implementing any fees, STEER and CZM will have to have significant stakeholder participation in the development of the fee system. The establishment of a semi-autonomous body to manage STEER, with a financial system set up to ensure that money raised for the park goes towards conservation efforts, would help in raising support.

The establishment of a semi-autonomous body to manage all territory wide protected areas under local government control could streamline conservation efforts but new legislation would have to be passed to create the agency as well as to create a PA Trust for marine as well as terrestrial protected areas. This could be a long process, especially if there is resistance from local government bodies. In addition, a semi-autonomous body would have to generate its own revenue and this too would require strong government support and cooperation as well as support from local residents. It would also require an investment of time and resources to get the financial mechanisms implemented. This means that conservation efforts and protected area initiatives would have to be priorities for the government, which is challenging even in the best of times when governments have competing interests such as education and economic development.

FIVE YEAR ACTION PLAN for the STEER Management Structure and Funding Scheme

Year 1 (FY 11)

- Pass the STEER Management Plan;
- Secure funds from local government to hire basic staff and open a STEER office;

- Hire a full time Marine Park Coordinator;
- Hire a full time Administrative Assistant;
- Hire a full time Marine Biologist;
- Hire an Interpretive Ranger;
- Work with NOAA and CZM to secure federal funding;
- Secure funding for a truck, boat;
- Work with stakeholders to determine the roles and responsibilities of the Advisory Committee and hold meetings monthly. This will likely be members of the Core Working Group;
- Work with DEE to determine current enforcement capabilities, train DEE officers and police, and get a dedicated officer patrolling and enforcing within STEER;
- Create the "Friends of STEER" non-profit organization and merge with "Friends of Christmas Cove";
- Host a STEER Opening event to raise money for the park;
- Work with legislators to determine the feasibility of a Protected Area System and start work on getting legislation to create a PA Trust for marine and terrestrial protected areas;
- Identify private donors and determine the feasibility of setting up a PA Trust;

Year 2

- Implement the Zoning and Navigation and Mooring Buoy Programs with stakeholder input;
- Implement biological baseline studies, GIS mapping and monitoring protocol;
- Conduct a Knowledge, Attitudes, and Practices Survey and create marketing and educational material to send out for a membership drive and public outreach campaign;
- Conduct willingness to pay (WTP) surveys for tourists and cruise ship passengers as part of a larger Economic Valuation and User Assessment Study;
- Work with private businesses to determine a concessions/permits fee schedule;
- Establish the host boat program;
- Establish a portable pump out station
- Implement biological monitoring program including contaminants and water quality research;
- Conduct a USVI Permitting, Regulatory and Enforcement Program
- Create a volunteer network to assist in monitoring and enforcement;
- Implement the voluntary cruise ship and tourist environmental entrance fee;
- Continue working on legislation for the PA Trust.
- Begin raising funds for the PA Trust;
- Work with hotels, dive shops, tour operators and concession stands to determine how to better market STEER and develop tours visitors would be willing to pay for;
- Work with government to determine feasibility of an Environmental Entrance Fee based on results from voluntary donations and WTP surveys;

Year 3

- Hire a third Interpretive Ranger;
- Work with hotels, marinas and yacht clubs to institute a Clean Marina and/or Blue Flag program;
- Conduct yearly visitor surveys of STEER including boat use, diving etc.
- Create a STEER Monitoring Database;
- Implement the Eco-Camp for students during the summer;
- Invest in an additional truck for patrolling and enforcement;
- Write grant for a visitor center;
- Pass legislation and capitalize the PA Trust;
- Establish the Board of the PA Trust and the laws governing how funds are invested and spent;
- Develop a Climate Change Adaptation Strategy;
- Create a snorkel trail;
- Conduct volunteer training;
- Continue working on establishing a PAS;

Year 4

- Build the visitor center;
- Develop a Monofilament Reduction Program;
- Develop a Groundings Response Plan
- Pass legislation and create the territory wide Protected Area Management Authority;
- Implement the Environmental Entrance Fee for all tourists and cruise ship passengers;
- Achieve Blue Flag status;

Year 5

- Develop a sustainable finance plan for the Protected Area System and review the STEER Sustainable Finance component;
- Continue fundraising and increasing the PA Trust endowment;
- Conduct another visitor use survey and compare with the earlier survey to see if financial mechanisms have had an impact on number of visitors to the park.
- Conduct a five year assessment of STEER conservation efforts to measure progress and effectiveness;

CONCLUSION

Visitors to the USVI as well as residents enjoy the natural beauty and pristine beaches that St. Thomas offers as well as the recreational marine sports including fishing, sailing, snorkeling and diving. The richness of the island's natural resources supports the tourism industry, the fishing industry, and much of the real estate business which in turn provide the basis for the island's economy as well as much of the revenue for local government. The enormous economic value provided by the natural resources must be conserved and the establishment of the STEER marine park would work towards the preservation of these resources. However, the important role of marine parks does not translate into financial support by the local government or by visitors or residents. STEER will require major financial resources to become an effective conservation entity including staff, infrastructure, equipment and research and monitoring investments. A diverse portfolio of financial mechanisms must be implemented to fill the financial gap such as the creation of a non-profit organization to coordinate donor and member driven fund raising, the establishment of concession fees for businesses operating within or adjacent to the Park, and the creation of a PA Trust.

STEER will be but one of several protected areas in the USVI. There are other protected areas with no dedicated resources, a semi-autonomous body managing other areas and federally managed protected areas. This diversity of protected areas needs coordination and a more streamlined local management authority covering the entire territory. A territory wide system of protected areas is envisioned and has been discussed for some time. Strong leadership and cooperation will be needed for this to become a reality and achieve better conservation results. Active stakeholder participation is indispensable as well as the support of the community in the East End of St. Thomas.

There are many threats to the natural resources that the tourism and fishing industries are dependent on. Protected areas seek to preserve these resources for the benefit of local residents, visitors, businesses and for the enjoyment of generations to come. The overall value of STEER and its conservation efforts must be recognized and supported.

ANNEX I

Table I

The activities based costing method organizes the programs and activities of the park into functional areas. These areas require separate management and have different goals and objectives. The functional areas are also designed to be applied to any and all protected areas enabling cross referencing at the national level. ***This activities based structure is a general structural framework and the following programs and associated activities may not all take place in STEER.*** The following table summarizes the six functional areas and the programs and the possible activities that will be implemented.

Functional Areas	Programs	Activities
Resource Management and Protection	Patrolling and Enforcement	Monitoring of resources through patrolling and the prevention of illegal activities in the park, as well as the issuance of fines or tickets for violating a rule or regulation.
	Monitoring & Research	Technical monitoring of the health of the marine ecosystem: the coral reef, the seagrass beds, the mangroves, and the animals and plants that live within these areas. Any research and data collection conducted by park wardens as well as outside research studies.
	Habitat Restoration & Wildlife Management	Re-vegetation, control and mitigation of invasive species, and restoration of threatened and endangered species.
	Zoning & Boundaries (incl Mooring Buoys)	The use of GIS and spatial analysis for planning and zoning. The marking of different multi-use zones as well as the boundaries of the Park. Studying the capacity and use of the different mooring locations and rotating them as necessary. Monitoring the buoys on a regular basis to identify those that may need to be replaced.
Tourism and Recreation	Fee Collection	Collection and management of recreational fees including but not limited to mooring fees, diving and snorkeling fees, entrance fees, and camping fees. Reporting, auditing and analyzing fee system.
	Concessions & Recreational	Negotiating contract services with nature guides and eco-tourism companies, and vendors. Uses such as special events;

	Special Uses	
	Visitor Safety and Protection	Search and rescue, emergency medical services, boat safety and patrol;
Commercial and Commodity Uses	Fishing and Marine Resources	Licensing or permitting or issuance of ID cards. Managing fishing activities, fish farming, and harvesting and sale of marine resources in the park.
	Timber and Forest Products	Managing use of live and salvage trees including mangroves, sale of firewood or coal, production, harvesting and sale of non-timber forest products
	Special Commercial Uses	Any agricultural uses, water diversions, sanitary systems, surface use, research facilities, still photography and motion pictures, transportation uses, and trails.
	Environmental Services	Valuation of natural resources and negotiating contracts for payments for environmental services.
Management and Administration	General Management and Administration	Staff development activities to increase capacity and environmental leadership through staff education. General administrative activities including hiring staff, procurement, contracting, filing, maintenance of park lost and found items, information technology.
	Financial Management	Business planning, budgeting, accounting, analysis of expenditures and revenue generation, reporting requirements, grant writing and fundraising.
	Planning and Emergency Preparedness	Structural and programmatic development, environmental impact analyses and approval of development plans within and around Park boundaries. Creation and implementation of an emergency preparedness strategy.
	Partnership Relations	Coordinating inter-agency management and planning. Management of donor relationships.
	Marketing	Website creation and management. Creation of park brand, posters, brochures, t-shirts, DVD.
Community Outreach and Development	Formal Environmental Education	Visits to schools and preparation of lesson plans on marine ecosystems, conservation, and protection of natural resources. Environmental training.

	Public Outreach and Awareness	Outreach activities to community members and park users to increase education and awareness.
	Stakeholder Engagement	Workshops and meetings to maintain and increase support for the Park through communication and education of stakeholders.
	Alternative Livelihoods	Training local citizens to employ them in jobs which reduce unsustainable practices and or distribute economic benefits to the community through job creation.
Facility Operations and Maintenance	Buildings, Grounds & Utilities	Cleaning, stocking supplies, and caring for buildings
	Roads & Trails	Maintenance of signs, and trails
	Navigational Markers and Mooring Buoys	Cleaning and replacement of buoys; monthly moorings inspection and maintenance
	Docking, Transportation & Fleet	Gas, replacement of equipment and parts and general maintenance of a vehicle and a boat
	Campgrounds and Picnic Facilities	Cleaning and upkeep of camping grounds and picnic facilities

Table II

SUMMARY FINANCIAL STATEMENT								
STEER	**REQUIRED**				**GAP**			
(figures in US dollars)	**Mission Critical**		**Optimal State**		**Mission Critical**		**Optimal State**	
FUNCTIONAL AREAS & PROGRAMS	**FTE**	**Funds**	**FTE**	**Funds**	**FTE**	**Funds**	**FTE**	**Funds**
RESOURCE MANAGEMENT & PROTECTION								
Patrolling and Enforcement	2.00	117,480	2.50	145,380	(2.00)	(117,480)	(2.50)	(145,380)
Scientific Monitoring and Research	0.85	66,412	0.85	72,142	(0.85)	(66,412)	(0.85)	(72,142)
Wildlife Management and Habitat Restoration	0.85	53,112	0.85	56,112	(0.85)	(53,112)	(0.85)	(56,112)
Cultural Resource Management	-	-	-	-	-	-	-	-
GIS, Zoning and Boundaries	0.10	16,364	0.10	19,164	(0.10)	(16,364)	(0.10)	(19,164)
Subtotal	3.80	253,368	4.30	292,798	(3.80)	(253,368)	(4.30)	(292,798)
TOURISM & RECREATION								
Visitor Safety and Protection	0.05	5,744	0.10	9,038	(0.05)	(5,744)	(0.10)	(9,038)
Recreation Fee Collection	0.05	3,360	0.15	7,848	(0.05)	(3,360)	(0.15)	(7,848)
Visitor Education and Interpretation	-	10,000	0.30	26,464	-	(10,000)	(0.30)	(26,464)

Concession and Recreation Special Uses	0.01	850	0.06	3,094	(0.01)	(850)	(0.06)	(3,094)
Subtotal	0.11	19,954	0.61	46,444	(0.11)	(19,954)	(0.61)	(46,444)
COMMERCIAL & COMMODITY USES								
Fishing (Marine Resources)	-	1,000	-	1,300	-	(1,000)	-	(1,300)
Timber and Forest Products	-	-	-	-	-	-	-	-
Environmental Services	-	-	-	-	-	-	-	-
Special Commercial Uses	0.063	5,594	0.06	6,344	(0.06)	(5,594)	(0.06)	(6,344)
Subtotal	0.06	6,594	0.06	7,644	(0.06)	(6,594.0)	(0.06)	(7,644)
MANAGEMENT & ADMINISTRATION								
General Management and Administration	1.30	225,140	1.35	237,914	(1.30)	(225,140)	(1.35)	(237,914)
Financial Management and Administration	0.80	39,304	0.80	39,304	(0.80)	(39,304)	(0.80)	(39,304)
Partnership Relations	0.05	5,400	0.05	6,000	(0.05)	(5,400)	(0.05)	(6,000)
Marketing	0.03	11,700	0.03	16,700	(0.03)	(11,700)	(0.03)	(16,700)
Subtotal	2.18	281,544	2.23	299,918	(2.18)	(281,544)	(2.23)	(299,918)
COMMUNITY DEVELOPMENT & OUTREACH								
Formal Environmental Education	0.70	63,300	0.80	84,588	(0.70)	(63,300)	(0.80)	(84,588)
Public Outreach and Information	0.25	68,356	0.50	96,832	(0.25)	(68,356)	(0.50)	(96,832)
Stakeholder Engagement	0.15	39,324	0.15	42,824	(0.15)	(39,324)	(0.15)	(42,824)

Sustainable Livelihoods & Training	-	-	-	-	-	-	-	-
Subtotal	1.10	170,980	1.45	224,244	(1.10)	(170,980)	(1.45)	(224,244)
FACILITY OPERATIONS & MAINTENANCE								
Buildings, Grounds, and Utilities	0.05	20,364	0.10	28,328	(0.05)	(20,364)	(0.05)	(28,328)
Roads	-	-	-	-	-	-	-	-
Trails	-	-	0.05	3,744	-	-	(0.05)	(3,744)
Docking Facilities (Marine)	0.05	26,444	0.05	30,704	(0.05)	(26,444)	(0.05)	(30,704)
Mooring Buoys and Navigation Markers	0.10	8,088	0.10	15,288	(0.10)	(8,088)	(0.10)	(15,288)
Transportation and Fleet	0.05	20,844	0.05	26,844	(0.05)	(20,844)	(0.05)	(26,844)
Campgrounds and Picnic Facilities	-	-	-	-	-	-	-	-
Subtotal	0.25	75,740	0.35	104,908	(0.25)	(75,740)	(0.30)	(104,908)
Grand Total	**7.50**	**808,180**	**9.00**	**975,956**	**(7.50)**	**(808,180)**	**(8.95)**	**(975,956)**
Total Investments		963,625		1,536,775		(813,625)		(1,386,775)
Grand Total incl Invesments		1,771,805		2,512,731		(1,621,805)		(2,362,731)

Table III

Suggested Investments Needed for STEER					
Item	**Critical**	**Optimal**	**Year Planned**	**Functional Area**	
Truck	20,000	20,000	1	RMP	PE
Marine Park Office	50,000	75,000	1	FOM	BGU
Training DEE Officers	10,000	13,000	1	RMP	PE
Boat	50,000	75,000	1	RMP	PE
Determine current enforcement capabilities	2,000	2,000	1	RMP	PE
Baseline data of marine resources	343,750	687,500	1	RMP	SMR
Monitoring Protocol	45,000	45,000	1	RMP	SMR
Economic Valuation Study	15,000	15,000	1	RMP	SMR
Dive gear	5,000	5,000	1	RMP	SMR
Field Equipment	12,500	12,500	1	RMP	SMR
Navigational and Boundary Marking Program	140,000	140,000	1	RMP	ZB
Boat Use Survey and Anchoring	19,000	19,000	1	RMP	ZB
Zoning Program	9,000	9,000	1	RMP	ZB
GIS Mapping	6,000	6,000	1	RMP	ZB
Signage Installation	12,000	12,000	1	TR	VEI
Park Visitation and Use Assessment	50,962	50,962	1	TR	VEI
Pump out station	25,000	25,000	1	CCU	SCU
Computer System	6,000	8,000	1	MA	GMA
Printers	3,000	5,000	1	MA	GMA
Laptops	7,500	9,000	1	MA	GMA
Software	7,500	7,500	1	MA	GMA

No-Take Education Campaign	5,000	10,000	1	CDO	FEE
KAP Survey	11,347	11,347	1	CDO	POI
Contaminants and water quality research	93,700	187,400	2	RMP	SMR
Marine Park Monitoring Database	10,000	10,000	2	RMP	SMR
USVI Permitting, Regulatory and Enforcement Program		27,200	2	RMP	WMHR
Groundings Response Plan	1,500	1,500	2	RMP	WMHR
Eco-Camp	16,866	16,866	2	CDO	FEE
Create a Climate Change Adaptation Strategy Plan		5,000	3	RMP	SMR
Truck		20,000	3	RMP	SMR
Monofilament Reduction Program	6,000	6,000	3	RMP	WMHR
Visitor center	30,000	60,000	3	TR	VEI
Volunteer Training		10,000	3	TR	SE
Snorkel Trail		5,000	3	FOM	T
Total	**1,013,625**	**1,611,775**			

Table IV

STEER Stakeholders Interviewed		
	Name	**Affiliation**
1	JP Oriole	Acting Assistant Director of the Division of Coastal Zone Management
2	Judy Pierce	Chief Wildlife Officer, Division of Fish and Wildlife
3	Renata Platenberg	Wildlife Biologist 3, Division of Fish and Wildlife
4	January Murray	Fisheries Biologist 3, Division of Fish and Wildlife
5	Austin Callwood	Director, Division of Environmental Enforcement
6	Roberto Tapia	Assistant Director, Division of Environmental Enforcement
7	Allegra Kean Moorehead	Communications Director, Department of Tourism
8	Sandra Romano	Division of Science and Mathematics, University of the Virgin Islands
9	Christine Settar	V.I. Marine Advisory Service, University of the Virgin Islands
10	Stephen Prosterman	Diving Supervisor, University of the Virgin Islands
11	Drew Russo	Head of Friends of Christmas Cove, Property Manager Water Point Estates
12	Mark Langevin	General Manager, Ritz Carlton Hotel
13	Haskell Noyes	Marine Activities Manager, Ritz Carlton Hotel
14	Lindy Schweigert	Yacht Charter business
15	John Holmberg	On Deck Racing
16	Erik Ackerson	Director, Virgin Islands Charter Yacht League
17	Jason Budsan	Small business owner, activist
18	Mike Houk	Marine Business, Compass Point
19	Sybille Sorrentino	Owner VI Eco-Tours
20	Bill Canfield	Manager St. Thomas Yacht Club
21	Andre Webber	St. Thomas Diving Club
22	Peggy Palfy, Russell White	Red Hook Diving Center
23	Hubert Brumant	Magen's Bay Authority
24	Rafe Boulon	National Park Service
25	Senator Donastorg	USVI Legislature
26	Jeanne Brown	VI Coastal Program Director, The Nature Conservancy

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